DATE: **June 28, 2006**
TO: **Potential Respondents to Request for Information**
FROM: **Ann Kelson, RFI Coordinator**
SUBJECT: **Questions and Answers, Set Two**

Below please find answers to the final set of questions received. Also, as a reminder, written responses are due no later than 3:00 p.m. PDT on Friday, July 7, 2006.

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1.   **Question:** Can you provide an estimate of the number of high rise buildings (residential and commercial) in Seattle?

    Answer*: Please visit the following website where you can obtain this information: www.emporis.com*

2.   **Question:** We are a large multinational FTTP vendor and are actively working to identify potential partners with which to respond to the RFI. Would the City be interested in a separate, technology overview response?

    Answer: *Yes.*

3.   **Question:** If the outcome of the RFI is to move forward with partner selection and construction of the network, what steps will need to take place to secure any necessary funding (e.g., would a public referendum be required)?

    Answer: *The City's preference is that all funding will be provided by the private sector. The City expects funding mechanisms to be a matter of discussion between the City and potential partners.*

4.   **Question:** How many municipal sites are connected to the existing municipal owned fiber network?

    Answer: *City sites connected to the existing municipal owned fiber network are all 27 City owned or leased downtown buildings; 30 out of 34 fire stations; all four police precincts; all City Light substations; 8 of 23 libraries; and 100 Seattle Department of Transportation controller cabinets. In addition, while the Seattle School District is not part of the City of Seattle's municipal corporation, it procures City resources to deploy fiber to schools. Currently all high schools and middle schools are connected. Four out of 80 elementary schools are connected and there are plans in place for bringing fiber connections to all elementary schools.*

5.   **Question:** Will there be any new municipal sites connected? If so, how many?

      Answer: *Yes. The remaining fire stations, libraries and elementary schools. See also Question 4.*

6.   **Question:** Are there any specific build-out time schedule requirements?

      Answer: *There are no specific build-out schedule requirements. The City recognizes that the network could be built in phases. The City expects the network to be available to all residents, businesses and institutions within a reasonable time.*

7.   **Question:** Does the City have any intention of allocating any financial budget to assist in covering the CAPEX of the network infrastructure? If so, what type of return is the City expecting?

      Answer: *See Question 3.*

8.   **Question:** Does the City want to own the network or just have the capability to utilize the network?

      Answer: *The City's preference is for a private entity to construct the fiber network at its sole cost, according to the desired characteristics in the RFI. The City desires to use the advanced capabilities of the network to save the City money and to provide more efficient municipal services. The City could potentially be a network owner, but does not intend to provide retail services to the end user. We expect services to the end user to be provided exclusively by the private sector.*

9.   **Question:** Are there any requirements/limitations on supplying power to the outside plant?

      Answer: *Seattle City Light will supply power pursuant to its customer service agreement.*

10.   **Question:** How does the City of Seattle plan to fund the Broadband Initiative?

      Answer: *See Question 3.*

11.   **Question:** Has the City considered bond initiatives?

      Answer: *See Question 3.*

12.   **Question:** Has the City considered applying for Federal Grants?

      Answer: *The City would appreciate any information regarding the source and availability of federal funds for this purpose.*

13.   **Question:** There are some business opportunity projections in Section 5 of the Request for Interest; however has the City done a cost analysis on what it will cost to implement their broadband initiative?

      Answer: *The City has completed some preliminary cost projections. It is expected that the City and/or the potential partners will undertake a more in-depth feasibility study as the project proceeds.*

14.   **Question:** Has the City projected how long it will take to break even and recover the cost to implement the broadband initiative?

      Answer: *A preliminary analysis indicates that revenues should equal debt service and operational expenses within 6 -7 years.*

15.   **Question:** Is the City looking for it Private Partners to take on financial risk? If so, what is the anticipated level of risk?

      Answer: *See Question 3. The City expects partners to take on financial risks as well as receive financial benefits in this project.*

16.   **Question:** Has the City considered combining this initiative with other initiatives to combine city, state, and federal funding to achieve multiple objectives?

      Answer: *The City has not considered this at this time. The City is willing to consider all options and will take advantage of efficiencies that may emerge. Any assistance that a partner could provide in this regard would be very helpful.*

17.   **Question:** How much of the fiber cable plant infrastructure does the city own/operate now?

      Answer: *The City does not understand this question. Notwithstanding, the City owns, jointly with its public entity partners, 350 miles of fiber cable.*

18. **Question:** What is the target "Take Rate" the City wants to achieve for its residence in the Triple Play Market?

    Answer: *For planning purposes, the City estimates an initial take rate of 35%– 40% for any one service in the triple play and believes penetration rates will actually be much higher.*

19. **Question:** Does the City want to subsidize specific government, educational and medical facilities to improve the capabilities of these important resources?

    Answer: *This is a matter of public policy, and would be an option to consider as the project progresses.*

20. **Question:** How does the City view the model for the Utopia Project in Utah?

    Answer: *The City is interested in the UTOPIA model and is following developments closely. The City notes that the services provided appear to be better and less expensive than those provided by the incumbent cable and phone companies.*

21. **Question:** How does the City view the model for the San Francisco Techconnect Community Wireless Broadband Network project?

    Answer: *The City is following the development closely and views the Google, Earthlink and San Francisco collaboration as an example of successful public private cooperation. The City's preference for its project is that all funding will be provided by the private sector.*

22. **Question:** How does the City view the success of the SpeakEasy WiMax program for small and medium size businesses?

    Answer: *At this time the City is not in a position to form an opinion about the success of SpeakEasy in this regard.*

23. **Question:** Is the City interested in utilizing as many local firms as possible?

    Answer: *Yes.*

24. **Question:** Does the City currently have arrangements with major Fiber and Internet Exchange providers such as Metromedia Fiber, PAIX and Seattle Internet eXchange?

    Answer: *The City currently has contracts with two Internet Service Providers.*

25. **Question:** Please confirm the City would be involved in establishing the rate/tax for municipal, education and medical facilities that are funded by the state, local or federal government?

    Answer: *The City is involved in establishing the City tax rates for taxable activities occurring within the City.*

26. **Question:** Please confirm the City is interested in having their Industry Partner maintain accounts, billing and collections for use of the broadband network?

    Answer: *Yes.*

27. **Question:** When will second round participants be contacted?

    Answer: *The estimated schedule is the latter part of August.*

28. **Question:** Has the City received funding via a bond initiative from the citizens of Seattle? If so, how much?

    Answer: *No. Nor has the City sought such funding. See also Question 3.*

29. **Question:** When will the requirements for the RFP be released?

    Answer: *The City has not determined that it will let an RFP. If an RFP is released, the City will provide sufficient notice on the website www.seattle.gov/broadband , by advertisement, and through other sources.*

30. **Question:** Has the City Task Force identified a network topology for the FTTP?

    Answer: *No. However the FTTP (passive GPON, EPON etc. or active Ethernet) must be capable of providing sufficient bandwidth and scalability.*

31.   **Question:** Does the City have the intention to lease or purchase the fiber optic cable network (backbone) that will be required for the wireless, cable and DSL providers to reach end users? In other words, who will fund the network to reach the end users?

      Answer: *See Question #3.*

32.   **Question:** When will responses to questions begin to be posted to the City's website at www.seattle.gov/broadband?

      Answer: *Responses to questions received as of June 16, 2006 were posted on June 19, 2006. Questions received as of June 21, 2006 will be posted on June 28, 2006.*

33.   **Question:** Will the City accept submission for sub-elements of the overall FTTP network such as fiber supply, test equipment, splitter cabinets and automated fiber management systems?

      Answer: *Yes.*

34.   **Question:** Does the City currently give preference to companies/consortiums that combine their individual pieces of the FTTP to offer a full solution?

      Answer: *The City does not have a preference. The City's interest is in achieving the goals of the Broadband Initiative.*

35.   **Question:** If the City prefers a partnership approach, does it offer any process for the introduction of interested parties? How should companies with an interest in partnering communicate this information to the City?

      Answer: *Companies interested in partnering should respond to this RFI. The City may facilitate a partnership between the City and multiple private partners.*

36.   **Question:** Does the City envision the proposed FTTP network's unencumbered access to the Public Safety Answering Point (PSAP) to provide 911 or E911 services without the need to bridge through an incumbent network?

      Answer: *Before the City can consider such an alternative, it must make sure it meets or exceeds the public safety performance of the current services.*

37. **Question:** What is the City's view on battery backup devices at the point of demarcation between the consumer premises and the network?

   Answer: *The City would need more information regarding the physical dimensions of such equipment but understands the needs for backup power.*

38. **Question:** For the purposes of effective leveraging of existing City assets, does the City see an advantage to any particular network architecture (Point to Point, or various PON architectures)? In the absence of more specific architecture information, may we recommend more than one type of architecture?

   Answer: *The City has explored both active point to point and point to multipoint PON options and believes that our existing assets will complement either architecture. The City is interested in recommendations regarding network architectures.*

39. **Question:** Will the City entertain an analog overlay on a separate wavelength for video carriage?

   Answer: *Yes. The City is aware of industry trends for RF overlays and carrying video in a dedicated 1550 nm wavelength separate from the wave length used for data services and understands its purpose.*

40. **Question:** Will Seattle City Light's System Operation Center be an option for collocation of the proposed FTTP system's Network Operations Center, or is a new NOC facility envisioned?

   Answer: *No.*

41. **Question:** Roughly half of Seattle's population resides in multiple dwelling structures. Has the Task Force on Telecommunications Innovation studied receptiveness of landlords to rewires in structures where CAT5 does not yet exist?

   Answer: *No.*

42. **Question:** In a public/private partnership are there prohibitions that would prevent the City from participating in an "equity type" structure?
   a. In either a for-profit or non-profit entity?
   b. Assuming that the city would be an equity partner is a "guaranteed utility rate of return" structure acceptable?
      i. In this assumed structure, could a for profit entity take an ownership position (with what restrictions?)

Answer: *The City is prohibited from owning stocks and bonds of private entities. That being said, depending on the objectives to be achieved by an "equity type structure," the City may be able to achieve such objectives in some other fashion.*

43. **Question:** Are there any policies, regulations, codes or laws that would prevent the City or its entities from providing infrastructure, facilities, ET all as "in kind contributions"?
    a. Are there any prohibitions that would prevent the various City entities from leasing or licensing their unique "municipal web based applications" to a for profit entity?

    Answer: *The City may not make a gift to a private entity except for the necessary support of the poor and infirm. However, as part of the consideration for a contract, we are unaware of any prohibition that would prevent an "in-kind contribution."*

44. **Question:** Notwithstanding typical organizational issues, and comments made in the RFI, can the Potential Partner negotiate with the City as one entity? Or, are individual negotiations with various entities envisioned?

    Answer: *The City will have a single point of contact representing all City departments.*

45. **Question:** Would the "City Anchor Tenant(s) Agreement(s)" be pledgeable?

    Answer: *The City is capable of entering into long term agreements.*

46. **Question:** Access Nodes – Assuming some form of phasing, within the City approximately how many total "Access Nodes" i.e. police and fire stations, municipal offices, schools etc. are envisioned to be covered by the FTTP network?
    a. Of this to total number, approximately what percentage is now covered by the existing municipal fiber network?

    Answer: *Please see Questions #4 and #5. There are also some Community Centers in neighborhoods that can still be connected.*

47. **Question:** In the existing municipal fiber net is there a "Network Operations Center" for overall operation, control, operation, provisioning?

    Answer: *The City does not have a network operations center to monitor fiber cable. However, fiber strands are used by various agencies and departments for their own network operations. These agencies and departments have their own network operations centers that primarily monitor electronics but indirectly monitor the fiber.*

48. **Question:** Of the existing 350 miles of municipal fiber, approximately how much spare capacity exists? How much is controlled by Seattle City Light?

    Answer: *There is some spare capacity. A network partner may want to consider opportunities for over-lashing on existing City fiber as a means to arrive at a faster and more economical deployment.*

49. **Question:** We would like to determine if the City would be interested in owning the FTTP network or would the City be interested in leasing back the network for an extended period of time, for example, a 30 year term?

    Answer: *Please see Question 8.*

50. **Question:** Assuming that the selected provider deploys the fiber to the premises ("FTTP") architecture based on network overbuild rather than new build, a significant percentage of the infrastructure cost of the deployment would be in securing access to the right-of-way ("ROW") and in installing the final drop from the curb to the premises. What access and assistance will the City make available regarding the placement of fiber, power, and electronics in the ROW?

    Answer: *The City anticipates providing a single point of contact to facilitate the permitting process.*

51. **Question:** Does the City have any position regarding the placement of electronics, such as remote terminals, relative to access to the ROW? For example, can remote terminal be placed on land, poles, both, or on any other available structures?

    Answer: *Depending on the physical dimension, and other factors such as power and ventilation needs, some network components may not be suitable for placement in the ROW. The City will work with partners to identify appropriate sites for the location of equipment in manner consistent with its regulations and policies.*

52. **Question:** Does the City envision facilitating FTTP deployment by providing trenching, or other support, to reduce the cost burden on the provider? Is there a road maintenance schedule whereby the provider could place fiber as part of a City road maintenance program?

    Answer: *The City does not anticipate providing trenching specifically for this purpose. Although only a small portion of City fiber is underground, the City anticipates capitalizing when trenches are open for other purposes, and has already begun this practice. Additionally, the City works with interested entities to identify opportunities for joint trenching presented through the street maintenance program and public works projects. However, this program may not be compatible with the schedule for fiber optic deployment.*

53. **Question:** Can the City provide a detailed schematic/map of the geographic location of poles, existing fiber, conduits, and their respective sizes? What terms and conditions does the City envision will be required for access to these facilities? If necessary, would the City be willing to replace/reinforce such facilities to facilitate deployment.

    Answer: *Due to security issues, the City cannot provide such details at this point. The City will provide information to partners if the project proceeds to the development phase. The terms and conditions for access to these facilities will be determined by the respective regulations and procedures of the departments involved. If replacement or reinforcement of facilities is necessary, the reimbursement costs to the facility owner(s) will be borne by the partnerhip.*

54. **Question:** The RFI states that the City is willing to consider allowing the use of its existing fiber facilities to facilitate FTTP deployment. Does the City have an extensive network of conduits that have sufficient space to pull additional fiber and can the City provide a map/schematic of any such conduits?

    Answer: *See Question 53. The City has an extensive conduit system, some of which has sufficient space for additional fiber.*

55. **Question:** What are the specifications of City-owned fiber cable including type, capacity, and number of fibers? For example, SMF28, Truewave, etc.

    Answer: *This type of detail will be discussed with partners.*

56. **Question:** Does the City have a preferred FTTx architecture? Examples include various types of PON, FTTC with VDSL2, broadband wireless access, etc.

    Answer: *The purpose of this RFI is to seek partners for the construction of a FTTP network. The City is open to PON and active networks. We are also interested in wireless networks such as Wi-Fi that can serve as complements to the FTTP network.*

57. **Question:** If required, would the City be willing to augment the size of its conduit?

    Answer: *The City is willing to provide spare conduit. If the size of the conduit is insufficient, the partnership will bear the cost of expansion.*

58. **Question:** Buried drops add significant cost relative to aerial drops. What is the City's position relative to the use of aerial versus buried drops? Are there any areas in which aerial facilities are prohibited and if so, in what specific locations?

Answer: *The City's policy is that where underground lines currently exist, new installations must be underground and where aerial exists, it can be aerial. About 80% of Seattle is aerial. See www.seattle.gov for areas delineated as aerial/underground.*

59. **Question:** The RFI implies that the City desires additional competition among broadband access providers. Unless multiple providers deploy multiple fiber networks, some mechanism will need to be put in place to enable multiple providers to share the same fiber. What mechanisms is the City considering that will financially protect and reward the provider that actually deploys the fiber infrastructure and provides access to other providers?

   Answer: *The City's preference is to have multiple service providers in an open competitive system over a single infrastructure. The City understands the economics of providing this network may necessitate a gradual approach to an open system occurring over a reasonable period of time.*

60. **Question:** Although the City appears to have a bias for multiple competing providers on a single broadband platform, if such an arrangement is not profitable for the underlying facilities provider, is the City opposed to having one provider operate the network and market the broadband services?

   Answer: *See Question #59.*

61. **Question:** Different architectures have different strengths and weaknesses. While the RFI identifies FTTP, architectures such as FTTC can also potential provide up to 100Mbps using twisted pair and VDSL2 technology for the final drop compared to 20 Mbps in BPON configurations supporting 32 splits. What is the position of the City of Seattle regarding the architecture chosen, if the architecture can support a minimum of 20Mbps with a clear evolution path to 100Mbps?

   Answer: *As you note, the City's preference is for FTTP architecture. The City believes FTTP is the only network that will be able to keep pace with rising bandwidth demand.*

62. **Question:** Although specific time frames for a phased build-out have yet to be determined, what variables does the City believe will have the most impact on determining the phases and the build-out schedule of the phases?

   Answer: *Any response the City could provide at this point would be speculative. However, some variables would include such factors as the ability to obtain financing, the cost of financing, take rates, density, etc.*

63. **Question:** In terms of non-discriminatory bit transfer, it appears that the position of the City is to allow for tiered levels of QoS and bandwidth capacity that can be purchased by resellers to offer to their respective customers. Does this describe the spirit of RFI?

     Answer: *The network owner shall not discriminate among providers of like services.*

64. **Question:** The RFI states that, "Customers should be able to attach any devices to the network as long as they do not impair network performance." In an FTTP network, the terminating device, from the perspective of the service provider, is the ONT that is mounted at the customer's premises. Is the intent of the statement that the customer should be able to attach any devices to the customer side of the ONT (or the customer side of a network terminating device) as long as they do not impair network performance?

     Answer: *Generally, yes.*

65. **Question:** Will the selected provider be required to obtain a video Franchise?

     Answer: *Under the current regulatory framework, yes, if it is using the ROW to provide cable services as defined in the Cable Act.*

66. **Question:** Can the City offer any type of assurance that any aerial plant that is constructed as part of the proposed deployment will not be subject to any requirements in the future that may require the burial of such facilities?

     Answer: *No. Potential aerial to underground conversion will be conducted according to the provisions of State law (RCW 35.99) and applicable City rules and regulations.*

67. **Question:** What process does the City envision following the RFI stage?

     Answer: *As stated in the RFI, there are several possibilities depending upon the responses received. The City could proceed no further, could invited selected respondents to discuss their submittals further, or proceed with an RFP.*